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STMICROELECTRONICS, INC. MAIL STATION 2346 1310 ELECTRONICS DRIVE CARROLLTON, TX 75006			EXAMINER .		
			LOKE, STEVEN HO YIN		
CARROLLIC	JN, 1X /3006		ART UNIT	PAPER NUMBER	
			2811		
,			DATE MAILED: 07/15/2003	DATE MAILED: 07/15/2003	

Please find below and/or attached an Office communication concerning this application or proceeding.

Application No. Application No. Application No. Application Summary			· ·				
Examiner Steven Loke 2811 281		Application No.	Applicant(s)				
Steven Loke	Office Action Summers	09/659,885	MENEGOLI, PAOLO				
Period for Reply A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION. Education of time may be available under the growings of 37 CPR 1.136(a), is no event, however, may a raply be timely filed. Education of time may be available under the growings of 37 CPR 1.136(a), is no event, however, may a raply be timely filed. If the period for reply appellate above, the maximus of 37 CPR 1.136(a), is no event, however, may a raply be timely filed. If the period for reply appellate above, the maximus studing period will apply and vill eaple for the mailing date of this communication. Fallow for one of the specifical shows the file will be studied to reply appellated above, the maximus institution period will apply and vill eaple for (5) (b) MONTHS from the mailing date of this communication, even if timely filed, may relate a viry examinate them adjustment. Sea 31 CPR 1.704(a). Status 1) Seasonsive to communication(s) filled on 24 April 2003. 2a) This action is FINAL. 2b) This action is non-final. 3) Since this application is in condition for allowance except for formal matters, prosecution as to the ments is closed in accordance with the practice under Ex parte Quayrie, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) Claim(s) 17-25 is/are pending in the application. 4a) Of the above claim(s) is/are withdrawn from consideration. 5) Claim(s) 17-20 and 22-25 is/are rejected. 7) Claim(s) 17-20 and 22-25 is/are rejected. 7) Claim(s) 21 is/are objected to. 3) Claim(s) 21 is/are objected to by the Examiner. Application Papers 9) The specification is objected to by the Examiner. Application Papers 9) The proposed drawing correction filed on is/are: a) secepted or b objected to by the Examiner. If approved, corrected drawings are required in reply to this Office action. 12) The proposed drawing correction filed on is/are: a) accepted in reply to this Office action. 12) Certified copies of the priority documents h	Office Action Summary	Examiner	Art Unit				
A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION. Education of times may be available under the provisions of 37 CFR 1.35(a), in no event, however, may a reply be timely filed. Education of times may be available under the provisions of 37 CFR 1.35(a) in no event, however, may a reply be timely filed. Education of times may be available under the provisions of 37 CFR 1.35(a) in no event, however, may a reply be timely filed. Education of the provision of the provision of the provision of 37 CFR 1.35(a) and a variety of the set of 32 CFR 1.35(a). If the period for reply is specified above, the maximum statutory period will apply end vid acquire 30 K (b) MCP/THS from the mainling date of this communication. The provision of the provision of the provision of the provision of CFR 1.704(a). Status 1)	The MANUALC DATE of this communication ann						
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- 1. Claims 19-21 are objected to because of the following informalities: Claim 19, lines 3-4, it is believed that the anode of the p-n junction diode is coupled to the source contact instead of the source. Claim 20, lines 3-4, it is believed that the anode of the Schottky diode is coupled to the source contact instead of the source. Claim 21, lines 3-4, the phrase "the second conductivity type" has no antecedent basis. Since lines 3-4 of claim 21 disclose the second conductivity type, it is believed that the phrase "a second conductivity type" (line 7 of claim 21) should change to "the second conductivity type". Appropriate correction is required.
- 2. Claims 22-25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification (page 4, lines 3-7) discloses the DMOS transistor 8 with an N+ type region which, together with a buried N+ type layer, will act as a highly doped base so that only a small fraction of the current from the source terminal S (usually 3 to 4%) may reach the P- substrate 16 in fig. 2. The specification never discloses a semiconductor structure, which includes a vertical DMOS device and a Schottky diode, can allow only 3% to 4% of the source current to reach the substrate as claimed in claim 22. The specification never discloses a semiconductor structure, which includes a vertical DMOS device and a Schottky diode, can allowing no more than 3% to 4% of the source current to reach the substrate as claimed in claims 23, 24 and 25.

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3. Claims 17-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 17, line 3, the phrase "a substrate of a second conductivity type" is unclear as to where is the substrate being located. Is the substrate of the second conductivity type located below the buried region?

- 4. Claim 17 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.
- 5. Claim 21 would be allowable if rewritten or amended to overcome the objection set forth in this Office action.
- 6. The following is a statement of reasons for the indication of allowable subject matter: The examiner agreed with the applicant that there is no discussion whatsoever in Pearce of what would happen if his device went into reverse operation. The examiner also agreed with the applicant that Cogan has no parasitic PNP (or NPN) device because Cogan does not have the claimed substrate of the vertical DMOS transistor. Therefore, the combination of Cogan and Pearce fails to teach or suggest a method of reducing the operational characteristics of a parasitic device (PNP or NPN) as does the present methods in claims 17 and 21.
- 7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Loke whose telephone number is (703) 308-4920. The examiner can normally be reached on 7:50 am to 5:20 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (703) 308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

sl July 12, 2003 Steven Loke Primary Examinar

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